

SAFETY DATA SHEET

according to 1907/2006/EC, Article 31

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R134a

Revision 1

Revision date 2014-10-16

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	R134a
CAS No.	811-97-2
EC No.	212-377-0

1.2. Relevant identified uses of the substance or mixture and uses advised against

Product Use	<p>[SU22] Professional uses: Public domain (administration, education, entertainment, services, craftsmen); [SU19] Building and construction work; [PC16] Heat transfer fluids; [PROC1] Use in closed process, no likelihood of exposure; [ERC7] Industrial use of substances in closed systems; [AC1] Vehicles;</p> <p>-----</p> <p>[SU22] Professional uses: Public domain (administration, education, entertainment, services, craftsmen); [SU19] Building and construction work; [PC16] Heat transfer fluids; [PROC1] Use in closed process, no likelihood of exposure; [ERC7] Industrial use of substances in closed systems; [AC2] Machinery, mechanical appliances, electrical/electronic articles;</p> <p>-----</p> <p>[SU22] Professional uses: Public domain (administration, education, entertainment, services, craftsmen); [SU19] Building and construction work; [PC16] Heat transfer fluids; [PROC1] Use in closed process, no likelihood of exposure; [ERC7] Industrial use of substances in closed systems; [AC3] Electrical batteries and accumulators;</p>
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1.3. Details of the supplier of the safety data sheet

Company	A-Gas UK Limited
Address	Banyard Road Portbury West Bristol BS20 7XH United Kingdom
Telephone	[+44] (0) 1275 376600
Fax	[+44] (0) 1275 376601
Email address of the competent person	info.uk@agas.com

1.4. Emergency telephone number

Emergency telephone number	[+44] (0) 1275 376600 24 hr
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.1.2. Classification - EC 1272/2008	Liquified gas: H280;
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2.2. Label elements

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2.2. Label elements

Hazard pictograms	
Signal Word	Warning
Hazard Statement	Liquified gas: H280 - Contains gas under pressure; may explode if heated.
Precautionary Statement: Storage	P410+P403 - Protect from sunlight. Store in a well-ventilated place.

2.3. Other hazards

Other hazards	No data available.
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SECTION 3: Composition/information on ingredients

3.1. Substances

67/548/EEC / 1999/45/EC

Chemical Name	Index No.	CAS No.	EC No.	REACH Registration Number	Conc. (%w/w)	Classification
R134a		811-97-2	212-377-0			

EC 1272/2008

Chemical Name	Index No.	CAS No.	EC No.	REACH Registration Number	Conc. (%w/w)	Classification
R134a		811-97-2	212-377-0			Liquified gas: H280;

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move the exposed person to fresh air. If breathing is difficult give oxygen.
Eye contact	Rinse immediately with plenty of water for 15 minutes holding the eyelids open.
Skin contact	Allow to evaporate. Remove contaminated clothing. Rinse immediately with plenty of water for 15 minutes.
Ingestion	Not applicable.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation	May cause irritation to respiratory system.
Eye contact	May cause irritation to eyes.
Skin contact	May cause irritation to skin.
Ingestion	Not applicable.

4.3. Indication of any immediate medical attention and special treatment needed

Inhalation	Seek medical attention if irritation or symptoms persist.
Eye contact	Seek medical attention if irritation or symptoms persist.
Skin contact	Seek medical attention if irritation or symptoms persist.
Ingestion	Seek medical attention if irritation or symptoms persist.

SECTION 5: Firefighting measures

5.1. Extinguishing media

	Use extinguishing media appropriate to the surrounding fire conditions.
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5.2. Special hazards arising from the substance or mixture

	Heating produces hazardous fumes.
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5.3. Advice for firefighters

	Wear self contained breathing apparatus and protective clothing.
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SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation of the working area. Evacuate personnel to a safe area. Prevent further spillage if safe. Keep public away from danger area. Keep upwind. Eliminate all sources of ignition.

6.2. Environmental precautions

Avoid release to the environment. Refer to special instructions/Safety data sheets.

6.3. Methods and material for containment and cleaning up

Do not allow product to enter drains.

6.4. Reference to other sections

See section 3, 8, 13 for further information.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Ensure adequate ventilation of the working area. Keep away from sources of ignition - No smoking. Keep away from heat. Heating may cause an explosion.

7.2. Conditions for safe storage, including any incompatibilities

Keep in a cool, dry, well ventilated area. Store in original container. Keep away from incompatible materials.

7.3. Specific end use(s)

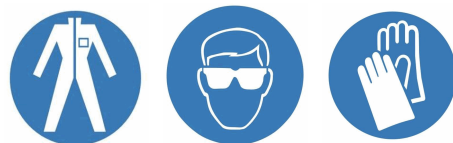
See section 1.2. Relevant identified uses of the substance or mixture and uses advised against for further information.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters**

See section 8.2 for further information.

8.1.1. Exposure Limit Values

R134a	WEL 8-hr limit ppm: 1000 WEL 15 min limit ppm: -	WEL 8-hr limit mg/m3: 4240 WEL 15 min limit mg/m3: -
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8.2. Exposure controls**8.2.1. Appropriate engineering controls**

Ensure adequate ventilation of the working area.

8.2.2. Individual protection measures

Wear protective clothing.
Wash all contaminated clothing before reuse.

Eye / face protection

Approved safety goggles.
In case of splashing, wear: Face shield.

Skin protection - Handprotection

Wear suitable gloves.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Occupational exposure controls

Adopt best Manual Handling considerations when handling, carrying and dispensing.
Keep away from food, drink and animal feedingstuffs.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

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9.1. Information on basic physical and chemical properties

Appearance	Liquified Gas.
Colour	Colourless
Odour	Slight
pH	No data available
Freezing Point	No data available
Evaporation rate	No data available
Flammability limits	No data available
Vapour Flammability	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available
Vapour density	No data available
Fat Solubility	No data available
Autoignition temperature	> 750 °C
Partition coefficient	= 1.06 log P
Relative density	= 1.2 (Water = 1 @ 20 °C)
Vapour pressure	= 5915 hPa @ 21.1°C
Initial boiling point	= -26.2 °C
Melting point	= -101 °C
Flash point	Not applicable.
Solubility	No data available

9.2. Other information

Conductivity	No data available
Surface tension	No data available
Gas group	No data available
Benzene Content	No data available
Lead content	No data available
VOC (Volatile organic compounds)	No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

	No data is available on this product.
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10.2. Chemical stability

	Stable under normal conditions. Vapours are heavier than air.
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10.3. Possibility of hazardous reactions

	No data is available on this product.
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10.4. Conditions to avoid

	Heat.
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10.5. Incompatible materials

	No data is available on this product.
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10.6. Hazardous decomposition products

	No data is available on this product.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

	No data available.
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11.1.4. Toxicological Information

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11.1.4. Toxicological Information

No data available

SECTION 12: Ecological information

12.1. Toxicity

No data available

12.2. Persistence and degradability

No data is available on this product.

12.3. Bioaccumulative potential

No data is available on this product.

12.4. Mobility in soil

No data is available on this product.

12.5. Results of PBT and vPvB assessment

No data is available on this product.

12.6. Other adverse effects

No data is available on this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Dispose of in compliance with all local and national regulations.

SECTION 14: Transport information

Hazard pictograms



14.1. UN number

UN3159

14.2. UN proper shipping name

1,1,1,2-TETRAFLUOROETHANE

14.3. Transport hazard class(es)

ADR/RID	2
Subsidiary risk	-
IMDG	2.2
Subsidiary risk	-
IATA	2.2
Subsidiary risk	-

14.4. Packing group

Packing group -

14.5. Environmental hazards

Environmental hazards	No
Marine pollutant	No

14.6. Special precautions for user

No data available.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

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ADR/RID	
Hazard ID	20
Tunnel Category	(C/E)
IMDG	
EmS Code	F-C S-V
IATA	
Packing Instruction (Cargo)	200
Maximum quantity	150 kg
Packing Instruction (Passenger)	200
Maximum quantity	75 kg

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulations	<p>COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.</p> <p>REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.</p>
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15.2. Chemical safety assessment

	No data is available on this product.
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SECTION 16: Other information

Other information	
Revision	<p>This document differs from the previous version in the following areas:.</p> <p>1 - Description.</p> <p>1 - Product Use.</p> <p>7 - 7.3. Specific end use(s).</p>
Text of Hazard Statements in Section 3	Liquified gas: H280 - Contains gas under pressure; may explode if heated.
Further information	
	<p>The information supplied in this Safety Data Sheet is designed only as guidance for the safe use, storage and handling of the product. This information is correct to the best of our knowledge and belief at the date of publication however no guarantee is made to its accuracy. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process.</p>